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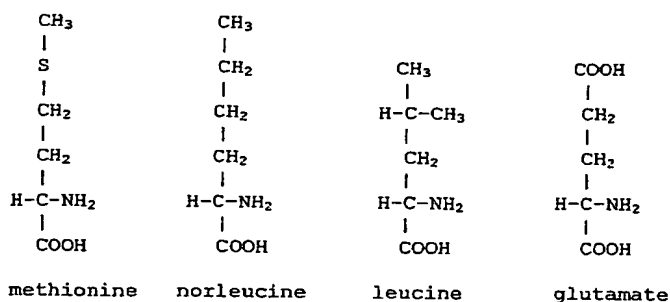
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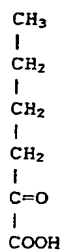
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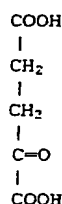


oxidative
deamination



2-ketocaproate

oxidative
deamination



2-ketoglutarate

(57) Abstract: The instant invention is drawn to the methods and compositions necessary to provide recombinant proteins with a substantially reduced or eliminated content of norleucine or other non-standard amino acids. Various embodiments of the invention provide for the substantial elimination of the incorporation of non-standard amino acids into recombinant proteins by the co-expression or enhanced expression of a protein (or the enzymatically active portion thereof) capable of degrading norleucine or other non-standard amino acids, including norvaline, beta-methylnorleucine, and homoisoleucine. In certain particular embodiments of the invention, the norleucine is degraded by a glutamate dehydrogenase, a leucine dehydrogenase, a valine dehydrogenase, a phenylalanine dehydrogenase, a glutamate/leucine/phenylalanine/valine dehydrogenase, or an opine dehydrogenase. Also provided are the cells and DNA constructs for carrying out these methods.



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